Method and Apparatus for Managing Subscription-type Messages

Background of the Invention

Field of the Invention

This invention relates generally to communication networks, and more specifically to subscription-type messages between a source and a plurality of message users.

Description of the Prior Art

The widespread use of communication networks has created both new opportunities, as well as a set of new problems. The opportunities include the possibility for user recipients to receive periodic messages from commercial or third party sources without having to request them separately. The problems include the potential deluge of unsolicited messages sent to user recipients.

Keeping track of subscriptions has become burdensome and inefficient for recipient users. Similarly, the originators of a series of messages or message subscriptions also have difficulties in maintaining updated records of active subscribers, soliciting

new subscribers, and identifying which subscribers no longer want to receive messages or subscription material.

Message service providers and their commercial message source partners are often blamed by recipient users who receive unwanted messages or subscription material.

Summary of the Invention

The invention provides methods and apparatus for managing legitimate subscription-type messages received by a recipient user of a communications network from known commercial sources, as well as from known individual or group sources. A related aspect of the invention provides a filtering process for identifying and intercepting broadcast-type messages sent from unauthorized sources to an addressee.

Various embodiments are provided for managing subscription-type arrangements involving a recurring series of messages sent to a plurality of user recipients on a communications network. The incoming messages are monitored by a filtering agent to identify message attributes, which are compared to corresponding parameters stored in a database to block certain messages from unauthorized sources and forward authorized messages to an addressee.

There are provisions in some embodiments for a communications service provider to create special arrangements with commercial partners to facilitate the starting, modification, and canceling of subscription arrangements. Individual user recipients can independently contact the commercial partners, third-party commercial entities, individuals, or groups to establish a subscription-type arrangement. Various forms and procedures enable a subscription manager component to keep track of all such arrangements in the database

One aspect of the invention provides techniques for creating an approved list of message sources in a subscription database that can be controlled and revised by a recipient. A related aspect provides a subscription manager of a message service provider to facilitate the maintenance and updating of such an approved list.

A further aspect provides techniques for screening and inspecting selected incoming communications to intercept subscription-type messages from unauthorized sources. A related aspect provides techniques for screening and inspecting selected outgoing communications to ascertain changes that have occurred in a list of approved subscriptions for a particular user recipient.

Some embodiments of the invention provide a subscription management system for message service providers that have commercial message source partners to facilitate the solicitation, acceptance, maintenance, updating, and cancellation of subscription arrangements between such message source partners and recipient users of the message service provider.

Certain embodiments of the invention provide a data structure for keeping track of subscription parameters. An aspect of such a data structure may include a name of a subscription provider, a source address for subscription material, a code name ID for a particular subscription, a destination address for a user recipient, a proxy address for receiving subscription messages and subscription material, and/or a status indicator for a particular subscription.

Various aspects of the invention may be implemented in a message communication system for transmitting messages by telephone networks, cable networks, satellite networks, transmission tower networks, wide area networks (WAN), local area networks (LAN), World Wide Web networks, radio networks, television networks, wireless networks, and the like.

The invention may be implemented in network systems providing textual messages, audio messages, video messages, image messages, graphics messages, inventory messages, catalog messages, product sales/servicing messages, photographic messages, data messages, and the like. A related aspect of the invention may include implementations of the invention in interactive real time messaging services that provide textual, audio and/or video communications between individual and group participants.

Brief Description of the Drawings

Fig. 1 is a block diagram showing an embodiment of the invention incorporating an email subscription manager for destination users that send and receive messages on communication networks;

Fig. 2 is schematic block diagram and flow chart showing an embodiment of the invention for processing incoming messages;

Fig. 3 is a detailed flow chart for an embodiment of the invention for processing incoming messages;

Fig. 4 is a schematic block diagram and flow chart showing an embodiment of the invention for processing outgoing messages;

Fig. 5 is a detailed flow chart for an embodiment of the invention for processing outgoing messages;

Fig. 6 is a block diagram showing an embodiment of the invention implemented in a communication system having a message service provider with commercial message source partners;

Fig. 7 is a block diagram showing possible implementations of the invention in various exemplary types of communication systems;

Fig. 8 shows exemplary data structures for starting a new messaging subscription and for canceling an existing message subscription; and

Fig. 9 shows an exemplary screen for an approved subscription message received by a recipient user.

Description of Ex mplary Embodiments of th Invention

The various embodiments of the invention provide recipient users of a communications network with ways to manage the receipt and processing of legitimate recurring messages, such as subscription-type messages that are addressed to them. The invention also provides a way for originators of subscription-type messages to manage the distribution of maintenance and content messages to user recipients on a communications network.

One feature of the invention puts primary control of subscription-type messages back in the hands of recipient users and provides them with tools to manage the legitimate recurring messages received at a destination address. Such recurring messages may be a result of a formal subscription arrangement with third-party individuals, groups, commercial entities, or specific commercial partners of a message service provider. In some instances, an arrangement may be characterized as a license for a particular commercial entity to send various types of messages to a recipient user.

Implementations of the invention may incorporate filtering rules stored in a subscription database accessible to a recipient user, as well as being accessible to a message service provided. A subscription manager may process incoming

messages and determine whether an individual message matches the filtering rules and is therefore part of an approved arrangement with the recipient user and the message originator.

An example of a recurring message that is authorized by a recipient user is a newsletter periodically sent out as a broadcast type message. Signing up for such a newsletter is a relatively straightforward process using, for example, the World Wide Web. At a Web site of a commercial entity, a user enters a destination email address, clicks a button, and thereby initiates a subscription arrangement to receive subscription material such as a newsletter. Sometimes a Web site employs a double opt-in registration system and delays sending the subscription material until a user recipient returns a confirmation message sent to the destination email address.

It may be easier for a message service provider to help manage subscription-type arrangement if a message originator is a commercial partner with the service provider. A typical agreement includes having the partner provide certain information on their operation such as the source address and/or alias address from which a subscription-type message is sent. Upon receiving a message from such source address, a service provider routes that mail to a special queue that feeds a filtering agent incorporated as part of a subscription manager component.

In a single opt-in registration system a user initiates and completes the subscription arrangement on a single visit to the partner's Web site. Thereafter, the subscription manager component monitoring incoming messages notices that a message from a commercial email partner is directed to a user recipient's mailbox. If this is a new subscription not already listed in a subscription database associated with the subscription manager, the filtering agent detects and labels this message for special processing. For example, the subscription manager component may proactively prompt the user and request confirmation that the user in fact has requested this subscription material. Such confirmation from the user may include asking the user to provide additional information to be included in the subscription database.

Depending upon whether the user confirms or disables confirmation, the new subscription may be added as an approved subscription for that user in the subscription database. As part of the subscription creation process, the subscription manager may also determine the subscription maintenance method and origination address either by parsing the message or from information previously provided by the partner. The subscription manager can then employ these two information parameters to assist the user with managing the subscription in the future.

In a double opt-in situation the subscription manager may create a new subscription in the subscription database, but may also auto-generate a return email confirmation or generate a Web site hit confirmation to the partner. In either case, the incoming mail procedure is a reaction to an incoming commercial message that achieves the purpose of obtaining the user's consent and creating a listing of a new approved subscription for that user.

Messages received as part of an existing subscription arrangement with a partner may be detected by matching selected message attributes with the subscription database. This matching process can be established to be very rigorous with multiple confirmation features or very loose with only one or two reliable individual confirmation features. For example, different parameters in the subscriptions data base could be matched with certain message attributes, such as specific terms or code names in the subject line, or indicia displayed in an X-header, and/or an alias address or other origination address of the message, and/or a proxy destination address for the recipient user.

It is therefore possible to assure that all mail originating from a commercial email partner's dedicated source address to the message service corresponds either to an existing subscription or a potential new subscription. In the event unauthorized mass

mailings are received and detected by the filtering agent, the source can be identified as a spammer and appropriate measures taken to remedy the situation.

Furthermore, the processing of incoming messages to detect a subscription status is virtually transparent from a user perspective. The user signs up for a newsletter or the like in an accustomed way, and those newsletters or other recurring types of messages are funneled through the subscription manager by virtue either of prior operational agreements between the service provider and the partner, or from other third-party commercial sources, individuals, or groups.

Because the subscription manager component keeps track of all the confirmed subscriptions for each user, both independent third party subscriptions as well as commercial partner subscriptions, the invention can maintain and periodically provide to a user a list of all such subscriptions. Thus, a set of relatively sophisticated filter rules is provided to automatically monitor and process incoming messages relating to a user independently initiating a subscription from either a third party source, or from a commercial partner of the message service provider.

The feature of the filtering agent may include differentiating between subscription-type messages having content only, and those relating at least partially to

management and operation of the subscription arrangement. Certain of these management factors may be incorporated in the subscription database for determining status, as well as procedures for maintaining, modifying, or canceling a subscription, and how and where to send messages to the third-party or partner relating to such issues.

Referring to an exemplary embodiment shown in Fig. 1, a communication network 20 such as a wide area network (WAN), the Internet, a local area network (LAN), or the like provides communications through a mail server 22 to one or more destination user addresses, such as 24 which are typically provided by a message service provider, such as an Internet Service Provider (ISP). There are many types of message originators that are familiar with the user address 24 and would like to send a message to the addressee at the user address 24. Such message originators may include an authorized sender 26 with an original source address 27, an authorized sender 28 that uses an alias source address 29, and a non-authorized sender 30 that uses an apparent source address 31.

Incoming messages are preferably routed through a mail subscription manager 32 that acts as a filtering agent to inspect each selected message that may qualify as a possible subscription-type of recurring message. An approved subscriptions

database 38 along with a rules database 40 are used by the subscription manager 32 to screen out as many unauthorized broadcast messages as possible and prevent their delivery to the destination user address 24. Any messages that are not deemed candidates for inspection, as well as authorized subscription-related messages, are eventually routed 34 to the destination user address 24. Although the invention is applicable to passive, receive only destination user addresses, most users also have the capability to send outbound messages that preferably are routed 36 via the subscription manager 32 through a server 22 and the network 20 to their destinations.

A listing of approved message sources is maintained for each individual destination user address 24, along with predetermined parameters, such as those indicated by bracket 39. Such a listing, as well as its associated parameters, may be controlled and periodically updated by a user (see 42) through direct communications 44 with the database 38 or through indirect communications 46 via the subscription manager 32. Although diverse ways of accomplishing such communications are available, it may be easier and most efficient to initiate such communications from the destination user address 24 of the addressee as shown by 50. Also, it is desirable for an individual user to monitor 48 the subscription database from time to time.

The exemplary embodiments of Fig. 2 include various implementations for processing incoming messages by the subscription manager 32 using the approved subscriptions database 38 in conjunction with the rules database 40a. Although authentication of an incoming message may be based on matching a single message attribute with a corresponding parameter in the database, improved reliability is provided by using at least two or more attributes as shown at 60, 62. If a satisfactory match is not made by the subscription manager component, then the message is preferably blocked 64 from delivery to its intended destination, and may be stored for future analysis and use in an archive 112. However, if the screened message is confirmed through the matching process 66 as an authorized message, it may be further processed to determine whether it contains only content 70, or instead includes maintenance information 80 regarding the status of the subscription-type arrangement. Content messages, as well as maintenance-related messages, may be forwarded directly to the destination user address or alternatively provided with respective informational display notices 72, 82. Such an informational notice 72 for content messages may include a subscription ID code 74, an indication such as 76 that this message was found to be on the approved listing in the database, and a prompt for viewing the current subscription list 78. Such an informational notice 82 for operational/maintenance messages may include a subscription ID code 84, a reminder that the message may contain subscription

status information, and a prompt for canceling the subscription. If cancellation is requested, the subscription manager may optionally require a double opt-out confirmation 90 to avoid inadvertent cancellations.

A self-explanatory flow chart is shown in Fig. 3 to disclose different implementations and choices for achieving the benefits of the invention. A typical sequence may include an initial inspection of an incoming message to find any subscription-type attributes 100. In the event no such attributes are found, the message is routed directly to a standard mail destination 102 such as new mail. Where attributes are found, a database search is made 104 to determine whether the message is part of an approved subscription for this addressee. If no match is found, the message may be refused 110 and possibly returned, or it may be sent to an archive 112 for future reference or further analysis. In some instances, it may nevertheless be helpful to forward the non-authenticated message to a temporary destination 116 at the user address along with a subscription consent form to give a choice to the destination addressee. Such temporary destination could be isolated from other messages, or received as bulk mail 109 or standard mail 102 with an appropriate action requested designation. If a new subscription approval results, confirmation information is preferably sent automatically to update the approved subscriptions database 38 and is also sent to a designated message originator 120.

Where authentication occurs by the comparison and matching process 104, the authorized message is forwarded to its intended address destination with preferably a marking 108 that indicate to the user addressee that this message is deemed OK, and/or a notice 106 identifying the ID code for this approved subscription arrangement. The specific destination may be either a standard new mail destination 102 or a special destination 17, such as bulk mail.

As further shown in the flow chart of Fig. 3, the subscription manager and associated database assures that coordinated updated subscription information is automatically provided to the service provider's database 103, as well as sent to any and all types all types of message originators, including but not limited to partners 126, subscription sources with Web page interfaces 124 and subscription sources with email interfaces 122.

Referring to Fig. 4, a block diagram illustrates how outgoing messages from first and second user addresses 24a, 24b are transmitted via the mail subscription manager 32 for selective screening in conjunction with the rules database 40b and the approved subscriptions database 38 to the mail server 22. Distribution of the messages occurs through a communications network 20 to appropriate destinations,

such as a commercial partner 240, a commercial third party 242, an individual user 244, or a group user 246.

The self-explanatory flow chart of Fig. 5 shows an exemplary processing sequence for outbound messages. Messages are screened to identify subscription-related topics in the message 140 and a differentiation is preferably made between a new subscription related message and an existing subscription message. Cancellation messages 144 are preferably sent along with a filled out "Cancel" data structure form 146 to the subscription manager for further inspection and processing 150. After recording appropriate updated information in the database 152, the message and attachment are forwarded to subscriber source address via communication network 20. Non-cancellation messages are marked for screening 148 by the subscription manager, and are then similarly routed, processed and forwarded 150, 152.

When an outgoing message involves a new subscription arrangement, an attached and filled out "start" data structure form 142 is similarly sent to the subscription manager for further inspection, processing, and database updating 150, 152 before being forwarded to the subscriber source destination.

An operating agreement between a communication service provider system 210 and a commercial partner 200 makes the benefits of the invention easier to be achieved. As shown in Fig. 6 the business partner 200 may receive preferential processing of its subscription solicitations 202 and confirmations 204, and by using a message form 205 with specially formatted fields for ID code name 206, subscription maintenance messages 207, and content messages 208 the service provider system 210 is better able to process such messages through server 210 and subscriber manager 212 to update accurately its database 214 and promptly forward such messages to the designated user address destination such as 216, 218 or 220.

Although illustrated embodiments emphasizing implementations of the invention in email communication systems, Fig. 7 show a widespread applicability of the invention features with communication networks 232, including but not limited to telephone wires, cable, satellite, and transmission tower systems 250. Moreover a recipient destination is not limited to email addresses 258, but may include other communication user interfaces and systems including but not limited to telephonic users 260, instant messaging (IM) users 262, and diverse types of individual 264 and group users 266.

Referring to Fig. 8, the creation and use of standardized data structures such as cancellation form 270 and new subscription form 272 provide important parameter information for the subscription manager database as well as for subscription sources.

The exemplary embodiment of Fig. 9 shows a standardized background screen 280 having additional user-activated links for access to a current subscription list 274, a subscription cancellation form 276, and a subscription start form 278 (see the exemplary form layouts of Fig. 8).

An exemplary received message format 282 as shown in Fig. 9 may include the usual standard header fields 285, and also display additional subscription-related fields 290 that could be provided individually or collectively by either a message originator or by the subscription manager. Such additional customized information fields may include a subscription ID code name 292, an indicator of a content message 294 and/or a maintenance message 296, as well as a mark or notation identifying an approved subscription message 298.

It will therefore be understood from the foregoing description of exemplary embodiments that the invention provides a new and unique technique to integrate

the various mechanisms for initiating, revising and terminating subscription arrangements with third-party and commercial partner originators, as well as to maintain an updated approved subscription list for each individual user recipient of a message service provider.

In addition the invention provides the user with a way to associate specific messages with previously established subscriptions and a centralized automatic method for managing those subscriptions with primary user control and input but with minimal user intervention in the implementation details.

It is to be understood that the invention contemplates revisions, substitutions and improvements in connection with the exemplary embodiments disclosed herein, all without departing from the scope of the invention as set forth in the following claims.